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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 10/648,600
Filing Date: August 25, 2003
Appellant(s): JAIN ET AL.

Christian A. Nicholes
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 27 April 2007 appealing from the Office action mailed 11 October 2006.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The following are the related appeals, interferences, and judicial proceedings known to the examiner which may be related to, directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal:

10/648,577

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

6,085,198	Skinner et al.	4-2000

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-26 are rejected under 35 U.S.C. 102(b) as being anticipated by Skinner et al. (U.S. Patent 6,085,198).

As to claim 1, Skinner et al. teaches a method of storing data into a database (see Abstract), the method comprising:

a client application receiving data (see figure 3, Comm Mgmt 305B and figure 4, step 400 and column 16, lines 48-49);

determining one or more routines that are associated with a type of said data, wherein said one or more routines are implemented by a program that is external to both said client application and a database server that manages said database (see column 16, lines 49-55, where "routines" is read on "methods");

invoking said one or more routines (see column 18, lines 6-10);

in response to said one or more routines being invoked (see column 18, lines 6-10), said program performing steps comprising:

determining one or more first values that are specified in said data, wherein said one or more first values correspond to one or more attributes of said type (see column 16, lines 60-62 and figure 4, step 404); and

determining one or more second values that correspond to one or more hidden columns of one or more tables in said database (See column 20, lines 24-27. The columns are hidden because the data members are private and thus invisible to the user/programmer.);

generating, based on said one or more first values and said one or more second values, a data stream that conforms to a format of data blocks of said database (see column 31, lines 1-2); and

writing said data into one or more data blocks in said database (see column 31, lines 23-33).

As to claim 2, Skinner et al. teaches further comprising:

in response to said one or more routines being invoked, said program performing steps comprising:

creating a data structure that comprises:

one or more first elements that correspond to said one or more attributes (see column 16, lines 60-62 and figure 4, step 404); and

one or more second elements that correspond to said one or more hidden columns (see column 20, lines 24-27);

populating said one or more first elements with said one or more first values (see column 30, lines 60-67); and

populating said one or more second elements with said one or more second values (See figure 5 and column 19, lines 30-32. It is implicit that these metadata are saved in the database.);

wherein said generating of said data stream is based on said data structure (see column 31, lines 1-2).

As to claim 3, Skinner et al. teaches wherein said data structure is created in memory that is associated with said client application (See column 7, lines 56-63. When Java loads and executes the program, any classes loaded by the application will be in the application's memory space. See also figure 9).

As to claim 4, Skinner et al. teaches wherein at least one of said one or more second values is associated with said one or more first values and distinguishes said one or more first values from other values in said data (see column 19, lines 30-60).

As to claim 5, Skinner et al. teaches wherein at least one of said one or more second values describes a position of said one or more first values relative to other values in said data (see column 20, lines 7-9, "myPassedMethods").

As to claim 6, Skinner et al. teaches wherein a number of attributes of said type is not defined to said client application (See column 17, line 65 – column 18, line 5. Attributes can be determined by calling functions instead of loading documents).

As to claim 7, Skinner et al. teaches wherein a type of an attribute of said type of said data is not defined to said client application (See column 17, line 65 – column 18, line 5. Attributes can be determined by calling functions instead of loading documents).

As to claim 8, Skinner et al. teaches wherein said generating and said writing are performed without causing a Structured Query Language (SQL) engine to load said data (see column 18, lines 8-12 where "without causing a SQL engine to load said data" is read on "extracted and loaded directly").

As to claim 9, Skinner et al. teaches wherein determining said one or more routines comprises locating addresses of one or more routines that are in a same entry as an identity of said type (see column 16, line 40, "associated data types").

As to claim 10, Skinner et al. teaches further comprising:

adding, to a table, an entry that indicates an association between said type and said one or more routines (see column 19, lines 66-67 and column 20 lines 15-19).

As to claim 11, Skinner et al. teaches further comprising:

invoking one or more routines that are located at one or more addresses that are associated with said type (see column 18, lines 6-10).

As to claim 12, Skinner et al. teaches a method of storing data into a database (see Abstract), the method comprising:

a client application receiving data that conforms to a first type definition that indicates two or more first attributes, wherein at least one of said two or more first attributes is of a type that is defined by a second type definition that indicates two or more second attributes (See figure 3, Comm Mgmt 305B and figure 4, step 400 and column 16, lines 48-49. "Two or more" attributes is anticipated by references to "attributes" and "parameters", plural, throughout the specification. See column 16, lines 14-30);

determining one or more first routines that are associated with said first type definition, wherein said one or more first routines are external to both said client application and a database server that manages said database (see column 16, lines 49-55, where "routines" is read on "methods");

calling said one or more first routines (see column 18, lines 6-10);

in response to one or more calls to said one or more first routines:

creating a first data structure with two or more first elements that correspond to said two or more first attributes (see column 16, lines 60-62 and figure 4, step 404); and

populating said two or more first elements with two or more first values that are specified in said data, wherein said two or more first values correspond to said two or more first attributes (see column 30, lines 60-67);

calling one or more second routines that are associated with said second type definition (see column 20, lines 12-14);

in response to one or more calls to said one or more second routines:

creating a second data structure with two or more second elements that correspond to said two or more second attributes (see column 20, lines 24-27); and

populating said two or more second elements with two or more second values that are specified in said data, wherein said two or more second values correspond to said two or more second attributes (See figure 5 and column 19, lines 30-32. It is implicit that these metadata are saved in the database.);

generating, based on said first data structure and said second data structure, a data stream that conforms to a format of data blocks of said database (see column 31, lines 1-2); and

writing said data into one or more data blocks in said database (see column 31, lines 23-33).

As to claim 13, Skinner et al. teaches further comprising:

generating a set identifier that is associated with one of said one or more first elements (see column 20, lines 29-31); and

populating a plurality of elements in said second data structure with said set identifier (see column 19, lines 30-32).

As to claims 14-26, Skinner et al. teaches a computer-readable storage medium carrying one or more sequences of instructions which, when executed by one or more processors, causes the one or more processors to perform the method recited in claims 1-13, respectively (see column 5, lines 50-57).

(10) Response to Argument

In response to Appellant's arguments that "Skinner fails to teach, disclose, or suggest anything about 'hidden columns' of a database table", the arguments have been fully considered but are not deemed persuasive.

Appellant's specification states "hidden columns store values that are not displayed to a user when the database table that contains the hidden columns is queried" (paragraph [0040]). Therefore, it is sufficient to show that private data members are "values that are not **displayed to a user** when the database table [...] is queried" (emph. added). The emphasized text indicates that the hidden status of a column is relative to the user's point of view. Skinner et al. enforces the well-known object oriented programming concept of data hiding (i.e., private and protected data members). In columns 11-12, section "Server-Side Components", Skinner et al. teaches that "[t]hese functions may also include the implementation of a permissions model for determining access permissions and change permissions for different clients or users" (see column 11, lines 35-38). Since access permissions are enforced, private data will not be presented to the user. From the user's point of view, this is indistinguishable from hiding the columns at the database level. Although there is an additional logical layer that enforces the "hidden-ness" of a column, Appellant's own definition of "hidden columns" only requires that the data is unavailable to a user.

Generally, Skinner et al. stores objects in a database and logically hides data through encapsulation and other well-known object-oriented concepts. Access restriction and data hiding are equivalent from the point of view of a user who is external to the system. Appellant's own definition of "hidden columns" supports this user-centric view.

In response to Appellant's arguments that Skinner et al. does not teach "a client application receiving data that conforms to a first type definition that indicates two or more first attributes, wherein at least one of said two or more attributes is of a type that is defined by a second type definition that indicates two or more second attributes," the arguments have been fully considered but are not deemed persuasive.

Specifically, Appellant argues that "one of the attributes of the type to which the data conforms must itself be of a type that comprises multiple attributes." This interpretation is overly narrow given the language of the claims. The claims merely require that one type is "indicated" from another type. Appellant is interpreting "indication" to only mean "composition", but indication can simply be a reference. For example, in a parent/child relationship (i.e., inheritance), a child class contains a reference (i.e., "indicates") to its parent class. Thus, the teachings of Skinner et al. are sufficient to teach the claimed invention and Appellant's arguments are based on an overly narrow interpretation of the claims.

In response to Appellant's arguments that Skinner et al. does not teach "wherein said generating and said writing are performed without causing a Structured Query Language (SQL) engine to load said data", the arguments have been fully considered but are not deemed persuasive.

Skinner et al. explicitly mentions direct loading ("may be [...] loaded directly", column 18, lines 9-10). Furthermore, Skinner et al. states that the data can be "loaded directly into the **desired data structures**" (see column 18, line 10, emph. added), and

the desired (or final) destination for the data is the database. Direct path loading is well-known in the art, and one of ordinary skill in the art would reasonably interpret "loaded directly" to mean "direct loading". For evidence, please see "Conventional and Direct Path Loads" from Oracle9i Database Utilities Release 2, submitted with the Office Action of 11 October 2006.

Despite Appellant's assertion that "desired data structures" do not "refer to structures within the database", Skinner et al. explicitly states that the metadata may be applied to the table generation process (see column 17, line 59). Claim 8 and its related claims make no distinction between extracting data to generate tables in a database and extracting data to populate fields in an already-generated table.

In response to Appellant's arguments that Skinner et al. does not teach "wherein determining said one or more routines comprises locating addresses of one or more routines that are in the same entry as an identity of said type", the arguments have been fully considered but are not deemed persuasive.

In order to be called, every function must be looked up. Applicant's claim merely describes the expected and well-known behavior of method invocation in an object-oriented environment. Skinner et al. implements this behavior by using the myMethods Vector which contains a reference to the methods associated with a given class. See columns 19-20, spanning paragraph.

In response to Appellant's arguments that Skinner et al. does not teach "generating a set identifier that is associated with one of said one or more first elements; and populating a plurality of elements in said second data structure with said set identifier", the arguments have been fully considered but are not deemed persuasive.

Claims 13 and 26, as best understood, are directed towards an identifier that maps child classes to parent classes. This feature must be a part of Skinner et al. if it were to implement multiple inheritance. In addition, Skinner et al. teaches these structures at lines 51 – 60 of column 19. Therefore, each class in the database of Skinner et al. would contain a reference (via mySuperClass) to its parent class.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/Mark A. Radtke/

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Mark A. Radtke

Appeal Conference held on 16 July 2007 at 9 AM. Agreement was reached to proceed to the Board of Appeals and Interferences.

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